

WHAT IS CLAIMED IS:

1. An uplink channel assignment method for user equipment (UE) in a CDMA (Code Division Multiple Access) communication system, comprising the 5 steps of:

transmitting an access preamble signal having channel information, said channel information being used to access a base station;

2 receiving an access preamble acquisition indicator signal from the base station in response to the access preamble signal;

10 3 transmitting a collision detection preamble for the reconfirmation of the right of using an uplink channel in response to the received access preamble acquisition indicator signal,

4 receiving a first signal indicating acquisition of the collision detection
preamble and a second signal indicating channel assignment, in response to the

15 collision detection preamble; and
5 upon receipt of the first and second signal, transmitting uplink channel data

2. The uplink channel assignment method as claimed in claim 1,
20 wherein the channel is allocated according to a combination of a signature included
in the access preamble and a signature included in the second signal, in the channel
assignment step.

3. The uplink channel assignment method as claimed in claim 2,
25 wherein the signature included in the access preamble indicates a channel
characteristic desired by the user equipment (UE) and the signature included in the
second indicator signal indicates assignment information of the channel which can

support the channel characteristic desired by the user equipment (UE).

4. An uplink channel assignment method for a base station in a CDMA communication system, comprising the steps of:

5 receiving an access preamble signal having channel characteristic, said channel characteristic being used by a specific user equipment (UE) to access the base station;

generating, upon receipt of the access preamble signal, an access preamble acquisition indicator signal in response to the received access preamble signal;

10 transmitting the generated access preamble acquisition indicator signal;

receiving a collision detection preamble signal from the user equipment (UE) in response to the access preamble acquisition indicator signal;

generating a first indicator signal representing acquisition of the collision detection preamble in response to the collision detection preamble, and a second

15 indicator signal representing assignment of the channel; and

transmitting the generated first and second indicator signals.

5. An uplink channel assignment method as claimed in claim 4, wherein the base station further comprising the step of:

20 receiving the uplink channel data through the channel which is determined according to the combination of the channel information by the access preamble signal and information in the second indicator signal.

6. A method for transmitting a message over an uplink common packet channel in a mobile station for a CDMA communication system, comprising the steps of:

selecting a signature corresponding to a channel characteristic to be used for

transmitting the message;

generating an access preamble having the selected signature corresponding to the channel characteristic;

transmitting the generated access preamble;

5 receiving a response signal to the access preamble;

selecting, upon receipt of the response signal, a signature used for a collision detection preamble;

generating the collision detection preamble including the selected signature;

transmitting the generated collision detection preamble;

10 receiving a response signal to the collision detection preamble;

receiving an channel assignment signal for a common packet channel, said assignment signal having a channel information to be used for transmitting the message;

transmitting the message through the assigned common packet channel.

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7. The method as claimed in claim 6, wherein the message transmitting step comprises the steps of:

transmitting the power control preamble to adjust a appropriate power level for the message; and

20 transmitting the message.

8. A method for assigning an uplink common packet channel in a base station for a CDMA mobile communication system, comprising the steps of:

receiving an access preamble including a signature corresponding to a data 25 rate of the common packet channel to be used;

generating a first response signal using the signature included in the access preamble;

- transmitting the generated first response signal;
- receiving a collision detection preamble;
- generating a second response signal using a signature corresponding to the collision detection preamble;
- 5 generating a channel assignment signal including a signature for assigning an available common packet channel having the data rate;
- transmitting the generated second response signal and the generated channel assignment signal;
- assigning the common packet channel using a combination of the signature corresponding to the channel assignment signal and the signature included in the access preamble; and
- 10 receiving the message through the assigned common packet channel.

9. A method for transmitting a message through an uplink common

15 packet channel in a mobile station for a CDMA communication system, comprising the steps of:

determining, when a message to be transmitted through an uplink common packet channel is generated, a maximum data rate being supportable by the common packet channel;

20 selecting a signature for the data rate to be used; ? AB

generating an access preamble including the selected signature for the data rate to be used;

transmitting the generated access preamble;

receiving an access preamble acquisition indicator signal corresponding to

25 the access preamble;

selecting a signature among collision detection signatures;

generating a collision detection preamble including the selected signature

among collision detection signatures;

transmitting the generated collision detection preamble;

receiving a collision detection indicator signal corresponding to the collision detection preamble and a channel assignment indicator signal including a signature for designating channel assignment;

determining an uplink common packet channel by a combination of the channel assignment indicator signal and the access preamble signature; and

transmitting the message through the determined common packet channel.

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10. 10. The method as claimed in claim 9, wherein the transmitting the collision detection preamble step comprises the step of:

transmitting the generated collision detection preamble using a different scrambling code from a scrambling code for the access preamble.

15. 11. The method as claimed in claim 9, wherein the determining the common packet channel step comprises the step of:

determining a common packet channel designated by a signature included in the channel assignment indicator signal among common packet channels having a data rate corresponding to the signature included in the access preamble signal.

20. 12. A method for assigning an uplink common packet channel in a base station for a CDMA communication system, comprising the steps of:

receiving an access preamble including a signature corresponding to a data rate to be used by a mobile station;

25. transmitting, upon receipt of the access preamble, an access preamble acquisition indicator signal including a signature corresponding to the signature in the access preamble;

receiving a collision detection preamble after transmission of the access preamble acquisition indicator signal;

transmitting, upon receipt of the collision detection preamble, a collision detection indicator signal and a channel assignment indicator signal including a 5 signature for designating a channel; and

receiving a message through the designated channel determined by the signature in the access preamble and the channel assignment indicator signal.

13. The method as claimed in claim 12, wherein the access preamble 10 acquisition indicator signal include information about the data rate being supportable by common packet channels.

14. The method as claimed in claim 12, wherein the access preamble acquisition indicator signal include information about the data rate and information 15 about availability of multi-code.

15. A method for assigning an uplink common packet channel in a mobile station for a CDMA communication system, comprising the steps of:

selecting, when a message to be transmitted through the uplink common 20 packet channel is generated, a signature for a data rate to be used,

generating an access preamble including the selected signature;

transmitting the generated access preamble;

examining, upon receipt of a channel assignment indicator signal, a signature included in the channel assignment indicator signal; and

25 selecting a common packet channel corresponding to the signature included in the channel assignment indicator signal from a group of common packet channels, said group of common packet channels corresponding to the signature indicated by

the access preamble.

16. A method for assigning an uplink common packet channel in a base station for a CDMA communication system, comprising the steps of:

5 receiving an access preamble including a signature for a data rate to be used by a mobile station;

selecting, when there is an available common packet channel among common packet channels having a data rate corresponding to the signature included in the access preamble, a signature corresponding to a channel number of said 10 available common packet channel;

generating a channel assignment indicator signal including the selected signature,

transmitting the generated channel assignment indicator signal.

15 17. A common packet channel assigning device for a mobile station in a CDMA communication system, comprising:

an access channel transmitter for transmitting an access preamble signal having channel information, said channel information being used to access a base station;

20 an access preamble acquisition indicator channel receiver for receiving an access preamble acquisition indicator signal transmitted by the base station in response to the access preamble signal;

a collision detection channel transmitter for transmitting a collision detection preamble in response to the received access preamble acquisition indicator 25 signal, said collision detection preamble being for detecting a collision;

an indicator signal channel receiver for receiving a first signal indicating acquisition of the collision detection preamble and for receiving a second signal

indicating channel assignment, said first signal being transmitted by the base station in response to the collision detection preamble signal; and
a common packet channel transmitter for assigning, upon receipt of the first signal, a common packet channel according to information indicated by the second 5 signal.

18. An uplink common packet channel assignment device for a base station in a CDMA communication system, comprising:
an access preamble channel receiver for receiving an access preamble 10 signal, said access preamble signal having channel information, said channel information being used by a specific mobile station to access the base station;
an access preamble acquisition indicator channel transmitter for generating, upon receipt of the access preamble signal, an access preamble acquisition indicator signal in response to the received access preamble signal, and for transmitting the 15 generated access preamble acquisition indicator signal;
a collision detection preamble channel receiver for receiving a collision detection preamble from the mobile station;
an indicator channel transmitter for generating a first indicator signal representing acquisition of the collision detection preamble in response to the 20 collision detection preamble, for generating a second indicator signal representing assignment of the common packet channel, and for transmitting the generated first and second indicator signals; and
a common packet channel receiver for receiving the common packet channel according to said channel information in the access preamble and to the second 25 indicator signal.

19. A device for transmitting a message through an uplink common

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packet channel in a mobile station for a CDMA communication system, comprising:
an access channel transmitter for selecting a signature corresponding to a data rate to be used for transmitting the message, for generating an access preamble including the selected signature corresponding to the data rate, and for transmitting
5 the generated access preamble;
an access preamble acquisition indicator channel receiver for receiving a response signal to the access preamble;
a collision detection channel transmitter for selecting, upon receipt of the response signal, a signature used for a collision detection preamble, for generating
10 the collision detection preamble including the selected signature used for the collision detection preamble, and for transmitting the generated collision detection preamble;
an indicator channel receiver for receiving a response signal to the collision detection preamble, and a channel assignment signal for a common packet channel
15 having the data rate to be used for transmitting the message; and
a common packet channel transmitter for determining the common packet channel using the signature included in the received channel assignment signal and the signature used for the access preamble, and for transmitting the message through the assigned common packet channel.

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20. A device for assigning an uplink common packet channel in a base station for a CDMA communication system, comprising:

an access channel receiver for receiving an access preamble including a signature corresponding to a data rate of the common packet channel to be used by a
25 mobile station;
an access preamble acquisition indicator channel transmitter for generating an acquisition indicator signal using the signature included in the access preamble,

and for transmitting the generated acquisition indicator signal;

15 a collision detection preamble channel receiver for receiving a collision detection preamble;

an indicator channel transmitter for generating an indicator signal using a signature corresponding to a signature included in the collision detection preamble, for generating a channel assignment indicator signal including a signature for assigning an available common packet channel having the data rate to be used for transmitting a message, and for transmitting the generated indicator signal and the channel assignment indicator signal; and

10 a common packet channel receiver for assigning the common packet channel indicated by the signature included in the transmitted channel assignment indicator signal and the signature used for the access preamble, and for receiving the message through the assigned common packet channel.

15 21. A device for assigning an uplink common packet channel in a mobile station for a CDMA communication system, comprising:

an access preamble channel transmitter for selecting, when a message to be transmitted through an uplink common packet channel is generated, a signature for a data rate to be used, for generating an access preamble including the selected signature, and for transmitting the generated access preamble;

20 a channel allocation indicator channel receiver for receiving a channel assignment indicator signal; and

25 a common packet channel transmitter for examining a signature included in the channel assignment indicator signal, and for selecting a common packet channel corresponding to the signature included in the channel assignment indicator signal among a group of the common packet channels corresponding to the signature included in the access preamble.

22. A device for assigning an uplink common packet channel in a base station for a CDMA communication system, comprising:

an access channel receiver for receiving an access preamble including a
5 signature for a data rate to be used by a mobile station;

a channel assignment indicator channel transmitter for selecting, when there
is an available common packet channel among common packet channels having a
data rate corresponding to the signature included in the access preamble, a signature
corresponding to a channel number of said available common packet channel, for
10 generating a channel assignment indicator signal including the selected signature,
and for transmitting the generated channel assignment indicator signal; and

a common packet channel receiver for receiving a common packet channel
corresponding to the channel assignment indicator signal among the channels having
the data rate corresponding to the signature for the access preamble.